

Claims

[c1]

1. An implantable coil stent comprising a first curved segment and a second curved segment, the first and second curved segments arcing about the longitudinal axis of the stent, each of the first and second curved segments having a first end and a second end, the stent further comprising an expandable link extending between the second end of the first curved segment and the first end of the second curved segment.

[c2]

2. The coil stent of claim 1 wherein the expandable link has at least one bend therein.

[c3]

3. The coil stent of claim 2 comprising a plurality of expandable links, each link having at least one bend therein.

[c4]

4. The coil stent of claim 3 wherein the plurality of expandable links includes a first expandable link and a second expandable link, the second expandable link spaced along the stent from the first expandable link by at least 90 degrees.

[c5]

5. The coil stent of claim 3 wherein the plurality of expandable links includes a first expandable link and a second expandable link, the second expandable link spaced along the stent from the first expandable link by at least 180 degrees.

[c6]

6. The coil stent of claim 1 wherein the expandable segment is made of stainless steel and the curved segments are made of nitinol.

[c7]

7. The coil stent of claim 1 wherein the curved segments are in the form of a wire having an outer layer of material and a radiopaque core.

[c8]

8. A coil stent having a longitudinal axis, the stent comprising a first segment which curves about the longitudinal axis of the stent, a third segment which curves about the longitudinal axis of the stent and a second segment disposed between the first and third segments, the first and third segments formed of a first material, the second segment formed of a second material different from the first material, the first, second and third segments joined end-to-end.

[c9]

9.The coil stent of claim 8 wherein the second segment has at least one bend therein.

[c10]

10.The coil stent of claim 8 where the second segment has a plurality of bends therein.

[c11]

11.The coil stent of claim 9 wherein the first material is a shape memory material and the second material is stainless steel.

[c12]

12.The coil stent of claim 11 wherein the first material is adhesively joined to the second material.

[c13]

13.A medical coil implant for implantation in a bodily vessel, the implant having a longitudinal axis, the implant comprising a strand having a plurality of winding segments which wind about the longitudinal axis of the implant and a plurality of linking segments, the linking segments extending between winding segments which are adjacent one another, each linking segment having at least one bend.

[c14]

14.The medical coil implant of claim 13 wherein the linking segments are made of a first material and the winding segments are made of a second material different from the first material.

[c15]

15.The medical coil implant of claim 13 wherein the linking segments and the winding segments are made from the same material, the linking segments having been subjected to a different treatment than the winding segments.

[c16]

16.The medical coil implant of claim 15 wherein the linking segments and the winding segments are made of a shape memory material.

[c17]

17.The medical coil implant of claim 16 wherein the shape memory material in the linking segments has been subject to a different heat treatment than the shape memory material in the winding segments.

[c18]

18.The medical coil implant of claim 16 wherein the shape memory material in the linking segments has been subject to a different annealing treatment than the shape memory material in the winding segments.

[c19]

19.The medical coil implant of claim 16 wherein the shape memory material is nitinol.

[c20]

20.The medical coil implant of claim 14 in the form of a stent.

[c21]

21.The medical coil implant of claim 14 in the form of a vena cava filter.

[c22]

22.The medical coil implant of claim 13 wherein winding segments which are adjacent to linking segments are adhesively bonded thereto.

[c23]

23.The medical coil implant of claim 13 wherein winding segments which are adjacent to linking segments are soldered thereto.

[c24]

24.The medical coil implant of claim 13 wherein the linking segments are made of L605.

[c25]

25.In combination, the coil stent of claim 1 and a medical balloon, the coil stent disposed about the medical balloon.

[c26]

26.In combination, the coil stent of claim 8 and a medical balloon, the coil stent disposed about the medical balloon.

[c27]

27.In combination, the coil stent of claim 13 and a medical balloon, the coil stent disposed about the medical balloon.

[c28]

28.A method of deploying a stent at desired bodily location comprising the steps of: providing a stent delivery catheter, the stent delivery catheter comprising the coil stent of claim 1, the stent disposed about the medical balloon;

advancing the catheter in a bodily vessel to a desired location in the body;

causing the stent to expand to a first diameter; and
expanding the expandable links to further expand the stent to a second diameter.

[c29]

29. The method of claim 28 wherein the stent is at least partially self-expanding.

[c30]

30. The method of claim 28 wherein the stent delivery catheter further comprises a medical balloon and the stent is disposed about the medical balloon.

[c31]

31. The method of claim 30 wherein the expanding step includes inflating the medical balloon to apply an outward force to the expandable links.